



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

646.3014

Job Sheet 168221



Part No: 646.3014

Job Qty: 12 ea

Part Name: Blade



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/13/17

Job Tracking No:

Due Date: 11/28/17

Created By: Linda Lacelle

Type: Stock

Description:

Note: DWG REV N/C SHEET 11 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	12 Ea	11/27/17		0.00	0.00	Start Up Machining		
100	Bandsaw	12 pcs	11/27/17		0.00	0.64	Bandsaw1		
110	CNC Vertical Machining	12 pcs	11/27/17		0.63	9.67	HAAS 1		
120	QC	12 pcs	11/27/17		0.00	0.00	QC2		
130	QC	12 pcs	11/27/17		0.00	0.00	QC8		
140	Outsource	12 pcs	11/27/17		0.00	0.00	Outsource1		
150	Packaging	12 pcs	11/27/17		0.00	0.00	Packaging2		
155	QC	12 pcs	11/27/17		0.00	0.00	QC5		
160	SprayPaint	12 pcs	11/28/17		0.00	0.33	Spray Paint		
170	QC	12 pcs	11/28/17		0.00	0.00	QC14		
180	Packaging	12 pcs	11/28/17		0.00	0.00	Packaging3		
190	QC21-SA	12 Ea	11/28/17		0.00	0.00	QC21		

Part Op 100 - Cut Blank at 2.670"

Descriptions: **110** - 1-Machine per folio FB150

140 - HEAT TREAT AS PER DWG. SEE NOTE #3

160 - PRIME AS PER DWG, SEE NOTE #4 137670

180 - *IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV*****

FEB 09 2018

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	MSTEEL-A2-B0.500X1.250	3	53	0	0

Part Specifications

Specifications could not be found.

Plex 11/13/17 4:13 PM dart.boucher.sylvie

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Machinin Thermoformin Large Fal																																																				
Date : _____	Step #: _____	QTY Effec																																																				
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: left;">Root Cause</th> </tr> </thead> <tbody> <tr> <td>Environment ☐</td> <td>No Re-verification ☐</td> <td>Pressure/Forced ☐</td> <td>Temperature/Cure ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/Damage/Defe ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamination ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersink ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplet ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td colspan="2"></td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> <td colspan="2">OTHER : _____</td> </tr> </tbody> </table>			Root Cause				Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defe ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplet ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Past Expiry Date ☐	Manufacturing Process ☐			Misidentified ☐	Past Due ☐	OTHER : _____	
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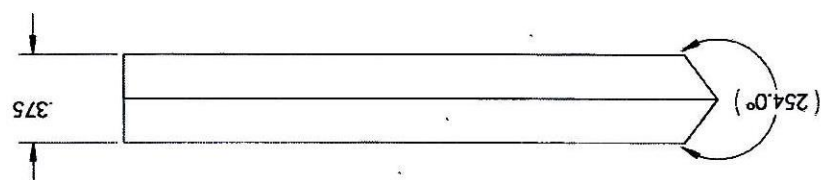
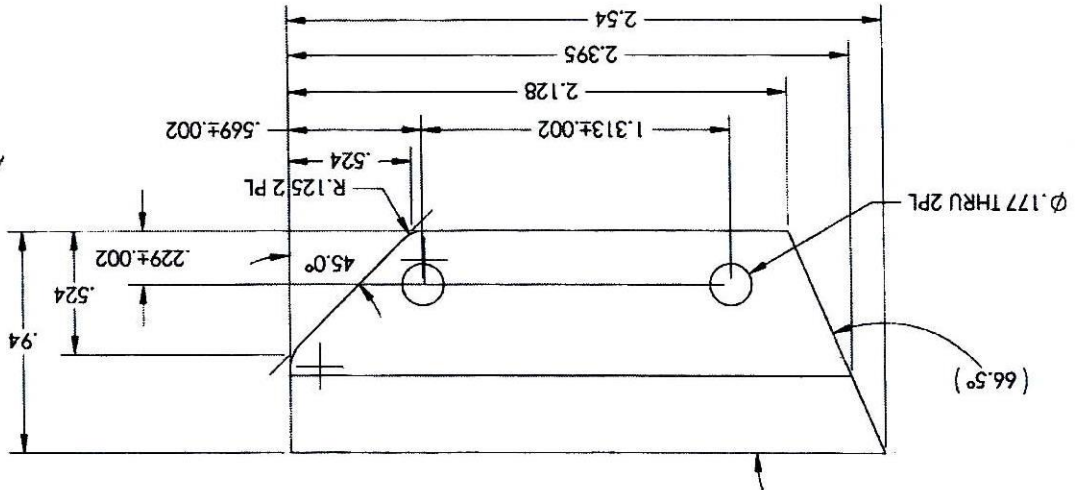
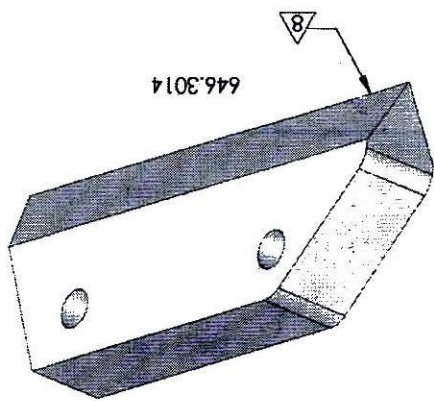
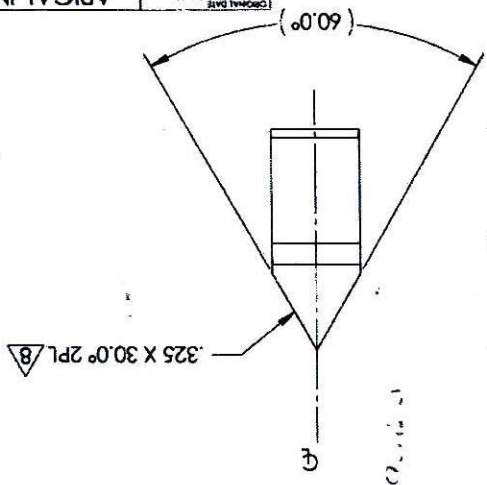
Mfg Date: 01/09/18
 Job No: 168221

646.3014
Start up Operation

PART NO:
Revision:
Operation:
Change No:

Blade

APICAL INDUSTRIES		2608 TEMPLE HEIGHTS DR OCEANSIDE, CA 92056-3512 (760)724-5300	
LOWER CUTTER ASSY		DATE: 08-28-98 DRAWN BY: J. BROWN CHECKED BY: J. BROWN APPROVED BY: J. BROWN	
REV	DATE	DESCRIPTION	APPROVED



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 168221

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

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OTHER : _____					



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038999

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
			Altech Part made from 01R Tool Steel							
4	170181	RBW6705G02331-3G	Rigging Pin Assembly N4 1--Issue P/O to Metcore ; P/O _____ RC: 26-30 2-Bead blast 3- Certificate of Conformity is required ***NOTE*** DROP SHIP TO FINISHER To ship directly to Groupe Altech Part made from 01R Tool Steel	Firmed	2/13/18	2 pcs	0 pcs	2 pcs	\$25.00/pcs	\$50.00
5	171452	D4202-1	Spacer HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED Part made from 6061-T6 Round Tube .500x.058W	Firmed	2/13/18	500 pcs	0 pcs	500 pcs	\$1.21362/pcs	\$606.81
6	168221	646.3014	Blade FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	2/13/18	11 pcs	0 pcs	11 pcs	\$28.41/pcs	\$312.51
7	170289	D5518-1	Crossbolt Spacer PO to Metcor: HEAT TREAT TO T4/T42 CONDITION MIN. UTS=30 KSI (60 HREW MIN) NOTE: DETAIL C OF C REQUIRED PART ARE MADE FROM 6061-T6 MATERIAL	Firmed	2/13/18	50 pcs	0 pcs	50 pcs	\$1.21362/pcs	\$60.68
Grand Total:										\$1,580.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
325326	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38999	N/A	A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

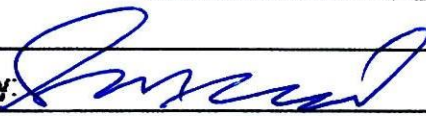
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	5	60 - 61 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
11	1,9	646.3014 (11) 646.3014 JOB. 168221 1 BOITE DE CARTON

21/2/18

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2018-02-16

APPROUVÉ

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
325326	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
38999	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications VAC HARDEN HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC		5	60 - 61 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
11	1.9	646.3014 (11) 646.3014 JOB. 168221 1 BOITE DE CARTON		

COMMENTAIRES / comments

VAC AHRDEN 1800F, 1:30 HRS
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification.

All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée.

Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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APPROUVÉ par / Approved by:

Isabel Oloro
QA Technician



DATE: 2018-02-16